NUCLEAR UTILITY GROUP
ON EQUIPMENT QUALIFICATION

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October 22, 2002

Annette L. Vietti-Cook
Secretary of the Commission
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

ATTENTION: Rulemakings and Adjudications Staff

SUBJECT: Nuclear Utility Group on Equipment Qualification - Comments Concerning NRC Proposed Rule "Combustible Gas Control in Containment," 67 Fed. Reg. 50,374 (Aug. 2, 2002)

Dear Ms. Vietti-Cook:

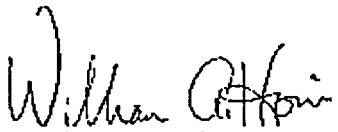
We appreciate the opportunity to comment on the subject proposed rule and supporting documents concerning containment combustible gas control for nuclear power plants (10 C.F.R. § 50.44). On behalf of the Nuclear Utility Group on Equipment Qualification ("NUGEQ" or "Group"),[1] we submit the enclosed comments in response to the referenced request for comments. Though the proposed rule is broader in scope, our comments focus on elements of the proposed rule and supporting documents related to equipment environmental qualification. In addition, the NUGEQ endorses and supports the comments submitted by the Nuclear Energy Institute ("NEI") on October 16, 2002.

[1] The NUGEQ is comprised of member electric utilities in the United States and Canada, including NRC licensees authorized to operate over 90 nuclear power reactors in the United States. The NUGEQ was formed in 1981 to address and monitor topics and issues related to equipment qualification, particularly with respect to the environmental qualification of electrical equipment pursuant to 10 C.F.R. § 50.49. NUGEQ submitted comments on the draft rule language in a letter dated December 28, 2001.

We commend the NRC for developing a rule based on risk-informed and performance-based insights that would eliminate unnecessary regulatory requirements. Our detailed comments, provided in the enclosure, relate to elements of the proposed rule that have implications for the regulatory scheme related to equipment environmental qualification and are intended to clarify our understanding of the proposed rule.

Again, we appreciate the opportunity to comment. Please contact us if you have any questions regarding our comments.

Sincerely,



William A. Horin
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Counsel to the Nuclear Utility Group on Equipment Qualification

Enclosure

Enclosure

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Our comments address proposed regulatory provisions applicable to currently-licensed reactors. These comments seek clarification of the NRC's intent related to three elements of the proposed rule that have implications for the regulatory scheme related to equipment environmental qualification: (1) equipment survivability, (2) compliance with 10 CFR 50.49, and (3) qualification requirements for hydrogen and oxygen analyzers.

The NRC bases its proposed amendment on a determination that the hydrogen release postulated from a design-basis loss-of-coolant accident ("LOCA") is not risk significant because it would not lead to containment failure; rather, the risk associated with hydrogen combustion is from beyond design-bases accidents (*e.g.*, severe accidents). 67 Fed. Reg. at 50,375. Consequently, the NRC proposes to eliminate the hydrogen release assumptions associated with a design-basis LOCA from § 50.44 and the associated requirements that necessitate hydrogen recombiners and backup hydrogen vent and purge systems. Further, the NRC proposes to reclassify the containment oxygen and hydrogen monitors from Category I of Regulatory Guide 1.97 to lower categories. NUGEQ agrees with these elements of NRC's proposed amendment.

Our understanding of the proposed rule – and the NRC's basis therefore – with respect to the three specific issues discussed below is that no new requirements are imposed by the rule for existing licensees. This understanding is supported by the NRC's regulatory analysis backfit discussion, wherein the NRC states that "[s]ince this regulatory analysis addresses *only relaxations to the current rule*, no backfit evaluation is required" (emphasis added). Regulatory Analysis for 50.44 at 5.

Requirements Concerning Equipment Survivability

The proposed rule includes requirements for equipment survivability in 10 C.F.R. § 50.44(b)(3) for all boiling water reactors with Mark III containments and all pressurized water reactors with ice condenser containments that do not rely upon an inerted atmosphere inside containment to control combustible gases. The proposed provision reflects requirements in the current rule for equipment survivability (10 C.F.R. § 50.44 (c)(3)). Equipment survivability has been established for current licensees and the NRC has reviewed and approved the methodologies and results as complying with the existing provisions of 10 C.F.R. § 50.44. Further, such analysis, review, and approval activities have established the acceptable criteria and methodologies associated with the term "equipment survivability." Therefore, it is our understanding that, for the affected plants, the Staff does not propose to impose new requirements related to equipment survivability, and that the existing equipment survivability and environmental analyses for these plants will remain valid for compliance with the amended rule. We recommend that this be clarified in the discussion of this section of the rule in the Statements of Consideration issued with the final rule. Suggested language, which is consistent with

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other language in the Statements of Consideration, is: "Existing equipment survivability criteria and methodologies used for currently licensed plants are sufficient to meet the intent of the rule."

Elimination of Design-Basis LOCA Hydrogen Release Assumption

The proposed rule would remove the existing definition of a design-basis LOCA hydrogen release and eliminate requirements for hydrogen control systems to mitigate such a release. As a result, the recombiners and/or vent and purge systems currently required by § 50.44(b)(3), which were intended to address the limited quantity and rate of hydrogen generation postulated to result from a design-basis LOCA, would no longer be required. The Commission finds that this hydrogen release is not risk-significant because (1) the design-basis LOCA hydrogen release does not contribute to the conditional probability of a large release up to approximately 24 hours after the onset of core damage; (2) the containment loadings associated with long-term hydrogen concentrations are no worse than those considered in the first 24 hours (*i.e.*, they are not risk significant); and (3) the accumulation of combustible gases beyond 24 hours can be managed by the severe accident management guidelines or other *ad hoc* actions because of the long period of time available to take such action. 67 Fed. Reg. at 50,377

The NRC has also determined that a backfit analysis is not required because the proposed rule does not impose more stringent safety requirements on 10 C.F.R. Part 50 licensees and either maintains without substantive change existing requirements or reduces current regulatory requirements. 67 Fed. Reg. at 50,381.

Based on these considerations (*i.e.*, elimination of and lack of risk-significance for the design-basis LOCA hydrogen release, and the establishment of no new requirements for existing licensees), we conclude that the NRC intends that the proposed revision not affect the requirements or environmental conditions used by licensees to demonstrate compliance with 10 C.F.R. § 50.49. This intent is also consistent with the Commission's ongoing effort to risk-inform its regulations, and reduce the regulatory burden on present and future power reactor licensees. We recommend that the Commission's intent in this regard be clarified in the Statements of Consideration issued with the final rule. Suggested language, which is consistent with other language in the Statements of Consideration, is: "Existing licensee analyses and environmental conditions used to establish compliance with 10 C.F.R. § 50.49 are not affected by the proposed rule and no new analyses or environmental conditions are imposed by these amendments to Section 50.44."

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Reclassification of Oxygen and Hydrogen Monitors

The proposed rule would require containment oxygen and hydrogen monitoring equipment to be functional, reliable, and capable of continuously measuring the concentration of hydrogen in the containment atmosphere following a beyond design-basis accident. 67 Fed. Reg. at 50,382. The proposed rule would not require further analysis or modifications by current licensees, and would consider existing oxygen monitoring commitments for currently-licensed plants to be sufficient to meet the intent of this rule. Certain design and qualification criteria would be relaxed (*e.g.*, high quality commercial grade items may be used), but the monitoring equipment is expected to perform in the environment anticipated in the severe accident management guidance. 67 Fed. Reg. at 50,379.

The reclassification of such monitors from Regulatory Guide 1.97 Category 1 to lower categories and associated relaxation of qualification criteria would permit licensees to remove the oxygen and hydrogen monitors from the list of equipment requiring qualification in accordance with 10 C.F.R. § 50.49. We recommend that the Commission include such clarification in the Statements of Consideration issued with the final rule. Suggested language is: "The monitoring equipment is expected to perform in the environment anticipated in the severe accident management guidance, but qualification in accordance with 10 C.F.R. § 50.49 is not required." We note that this is consistent with the conclusion for licensing of new plants. 67 Fed. Reg. at 50,379.